



**F0130**  
BUS COUPLER

0120  
BUS SECTION  
0220

**FD230**  
BUS COUPLER

**=D02**  
CABLE-9

GT-2

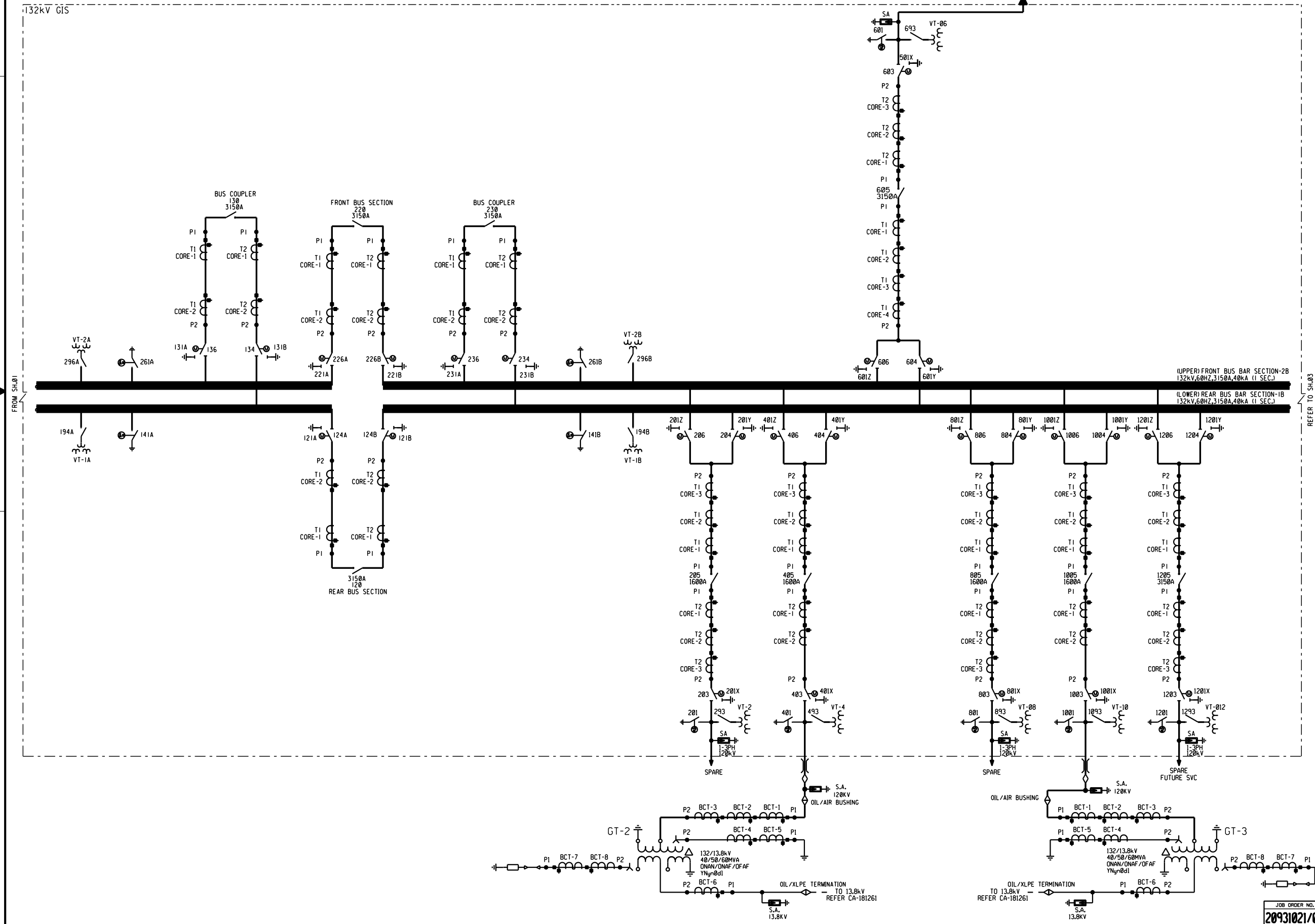
SGT-02

**[-D08]**  
CABLE-10

GT-3

**012**  
CABLE-11
















SGT-2  
POWER TRANSFORMER  
380KV/132KV/13.8KV  
302/402/502MVA  
ONAN/ONAF1/ONAF2-OF4F  
+10%-15% ON LOAD TAPS  
ON 380kV IN STEPS OF 1.25%  
Z=19(500MV BSE)  
(TYPICAL DETAILS)



## NOTES

1. CTs for 132kv NETWORK ARE SHOWN AS PER SEC STANDARDS SPECIFICATION & PROTECTION REQUIREMENT. THE VALIDITY OF CTs FOR THE SYSTEM WILL BE ENSURED AFTER CT SIZING CALCULATION.
2. THE CTs SHALL BE INSIDE DELTA WINDING.

### LEGEND

- |   |   |
|---|---|
|  | CIRCUIT BREAKER (SF6)                     |
|  | HIGH SPEED MOTORIZED EARTH SWITCH         |
|  | MOTORIZED DISCONNECT SWITCH               |
|  | MAINTENANCE EARTHING SWITCH               |
|  | COMBINE MOTORIZED DISCONNECT/EARTH SWITCH |
|  | CURRENT TRANSFORMER                       |
|  | AUTO TRANSFORMER (SGT)                    |
|  | VOLTAGE TRANSFORMER                       |
|  | SURGE ARRESTER (OUTDOOR TYPE)             |
|  | SURGE ARRESTER (GIS TYPE)                 |
|  | FUTURE LINE                               |
|  | CABLE                                     |
|  | ZIG ZAG TRANSFORMER                       |
|  | SF6/AIR BUSHING                           |
|  | SF6/OIL INTERFACE ENCLOSURE OF SGT        |

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CE-195451

AS-BUILT	BY	DATE
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01	26-03-11	DAR	REVISED AS PER SEC LETTER #030343/0036/11, DATED:22/03/2011	TAMER	YAHYA	YAHYA
00	31-01-11	DAR	FOR APPROVAL	TAMER	YAHYA	YAHYA
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.

**الشركة السعودية للكهرباء**  
**Saudi Electricity Company**

DRAWN BY USMAN CHECKED BY TAMER SCALE: 1/4"

DATE STARTED 23-01-2011 DATE COMPLETED                     

OPR'G. DEPT. \_\_\_\_\_ ENG. DEPT. \_\_\_\_\_

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MATERIAL UNLESS SPECIFIED AND DATED

1231 V. SINGLE LINE DIAGRAM WITH START DATA

132KV SINGLE LINE DIAGRAM WITH CT&VT DATA  
300/132/13.8KV SUBSTATION

380/132/13.8KV SUBSTATION

CONSTRUCTION OF NEW 380/132/13.8KV S/S - 4027  
Riyadh SAUDI ARABIA

INDEX		PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
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JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
20931021/00	P	C257	CA - 181241	02 of 05	01

[illegible]

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AS-BUILT		BY			DATE		
01	26-03-11	DAR	REVISED AS PER SEC LETTER #03043/0036/11, DATED:22/03/2011			TAMER	YAHYA
00	31-01-11	DAR	FOR APPROVAL			TAMER	YAHYA
REV. NO.	DATE	BY	DESCRIPTION			CHKD.	CERT.
						APPD.	

<h2 style="margin: 0;">الشركة السعودية للكهرباء</h2> <h2 style="margin: 0;">Saudi Electricity Company</h2>		
DRAWN BY: <u>USMAN</u>	CHECKED BY: <u>TAMER</u>	SCALE: <u>AS IS</u>
DATE STARTED: <u>23-07-2011</u>	DATE COMPLETED: <u>                    </u>	
OPR'G. DEPT.: <u>                    </u>	ENG. DEPT.: <u>                    </u>	
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED</b></p> </div> <div style="width: 45%;"> <p><b>REVISION/CERTIFICATION INFORMATION</b></p> <p>BOC NO. <u>                    </u>      BY/ENG. <u>                    </u></p> </div> </div>		
<h3 style="margin: 0;">132kV SINGLE LINE DIAGRAM WITH CT&amp;VT DATA</h3> <h3 style="margin: 0;">380/132/13.8kV SUBSTATION</h3> <h3 style="margin: 0;">CONSTRUCTION OF NEW 380/132/13.8kV S/S # 9027</h3> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <span><b>RIYADH</b></span> <span><b>SAUDI ARABIA</b></span> </div>		

SEC-A (2004/10)  
SECA00

SEC-CTA SPEC. NO.	LOCATION	132kV FUTURE SVC SPARE BAYS GIS CURRENT TRANSFORMER DATA						FUNCTION
		CT.	CORE NO.	RATIO	CLASS	TECHNICAL DATA	BURDEN	
PR9027	132kV GIS, =D12	T1	CORE-1	3000/1A	CL.PX	Vkp>4200V, Rct<6ohm Im<8.33mA	---	MAIN-1 PROTECTION (FUTURE)
				2500/1A	CL.PX	Vkp>3500V, Rct<5ohm Im<10mA	---	
				2000/1A	CL.PX	Vkp>2800V, Rct<4ohm Im<12.5mA	---	
				1600/1A	CL.PX	Vkp>2240V, Rct<3.2ohm Im<15.6mA	---	
				1200/1A	CL.PX	Vkp>1680V, Rct<2.4ohm Im<20.8mA	---	
				1000/1A	CL.PX	Vkp>1400V, Rct<2ohm Im<25mA	---	
			CORE-2	3000/1A	CL.PX	Vkp>4200V, Rct<6ohm Im<8.33mA	---	MAIN-2 PROTECTION (FUTURE)
				2500/1A	CL.PX	Vkp>3500V, Rct<5ohm Im<10mA	---	
				2000/1A	CL.PX	Vkp>2800V, Rct<4ohm Im<12.5mA	---	
				1600/1A	CL.PX	Vkp>2240V, Rct<3.2ohm Im<15.6mA	---	
				1200/1A	CL.PX	Vkp>1680V, Rct<2.4ohm Im<20.8mA	---	
				1000/1A	CL.PX	Vkp>1400V, Rct<2ohm Im<25mA	---	
			CORE-3	3000/1A	CL.PX	Vkp>4200V, Rct<6ohm Im<8.33mA	---	SPARE
				2500/1A	CL.PX	Vkp>3500V, Rct<5ohm Im<10mA	---	
				2000/1A	CL.PX	Vkp>2800V, Rct<4ohm Im<12.5mA	---	
				1600/1A	CL.PX	Vkp>2240V, Rct<3.2ohm Im<15.6mA	---	
				1200/1A	CL.PX	Vkp>1680V, Rct<2.4ohm Im<20.8mA	---	
				1000/1A	CL.PX	Vkp>1400V, Rct<2ohm Im<25mA	---	
		T2	CORE-1	3000/1A	CL.PX	Vkp>4200V, Rct<6ohm Im<8.33mA	---	FR+METERING (THROUGH SATURABLE CT.)
				2500/1A	CL.PX	Vkp>3500V, Rct<5ohm Im<10mA	---	
				2000/1A	CL.PX	Vkp>2800V, Rct<4ohm Im<12.5mA	---	
				1600/1A	CL.PX	Vkp>2240V, Rct<3.2ohm Im<15.6mA	---	
				1200/1A	CL.PX	Vkp>1680V, Rct<2.4ohm Im<20.8mA	---	
				1000/1A	CL.PX	Vkp>1400V, Rct<2ohm Im<25mA	---	
			CORE-2	4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	---	87B BUSBAR PROT.(DISC. ZONE)
				4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	---	87B BUSBAR PROT.(CHECK ZONE)
			CORE-3	4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	---	87B BUSBAR PROT.(CHECK ZONE)
				4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	---	87B BUSBAR PROT.(CHECK ZONE)

SEC-CTA SPEC. NO.	LOCATION	132kV FUTURE CAPACITOR BANK SPARE BAYS GIS CURRENT TRANSFORMER DATA						FUNCTION
		CT.	CORE NO.	RATIO	CLASS	TECHNICAL DATA	BURDEN	
PR9027	132kV GIS, =D17 =D24	T1	CORE-1	2000/1A	CL.PX	Vkp>3500V, Rct<5ohm Im<10mA	---	MAIN-1 PROTECTION (FUTURE)
				1600/1A	CL.PX	Vkp>2800V, Rct<4ohm Im<12.5mA	---	
				1200/1A	CL.PX	Vkp>2100V, Rct<3ohm Im<16.7mA	---	
				1000/1A	CL.PX	Vkp>1750V, Rct<2.5ohm Im<20mA	---	
				800/1A	CL.PX	Vkp>1400V, Rct<2ohm Im<25mA	---	
			CORE-2	2000/1A	CL.PX	Vkp>3500V, Rct<5ohm Im<10mA	---	MAIN-2 PROTECTION (FUTURE)
				1600/1A	CL.PX	Vkp>2800V, Rct<4ohm Im<12.5mA	---	
				1200/1A	CL.PX	Vkp>2100V, Rct<3ohm Im<16.7mA	---	
				1000/1A	CL.PX	Vkp>1750V, Rct<2.5ohm Im<20mA	---	
				800/1A	CL.PX	Vkp>1400V, Rct<2ohm Im<25mA	---	
			CORE-3	2000/1A	CL.PX	Vkp>3500V, Rct<5ohm Im<10mA	---	SPARE
				1600/1A	CL.PX	Vkp>2800V, Rct<4ohm Im<12.5mA	---	
				1200/1A	CL.PX	Vkp>2100V, Rct<3ohm Im<16.7mA	---	
				1000/1A	CL.PX	Vkp>1750V, Rct<2.5ohm Im<20mA	---	
				800/1A	CL.PX	Vkp>1400V, Rct<2ohm Im<25mA	---	
		T2	CORE-1	2000/1A	CL.PX	Vkp>3500V, Rct<5ohm Im<10mA	---	FR+METERING (THROUGH SATURABLE CT.)
				1600/1A	CL.PX	Vkp>2800V, Rct<4ohm Im<12.5mA	---	
				1200/1A	CL.PX	Vkp>2100V, Rct<3ohm Im<16.7mA	---	
				1000/1A	CL.PX	Vkp>1750V, Rct<2.5ohm Im<20mA	---	
				800/1A	CL.PX	Vkp>1400V, Rct<2ohm Im<25mA	---	
			CORE-2	4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	---	87B BUSBAR PROT.(DISC. ZONE)
				4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	---	87B BUSBAR PROT.(CHECK ZONE)
			CORE-3	4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	---	87B BUSBAR PROT.(CHECK ZONE)
				4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	---	87B BUSBAR PROT.(CHECK ZONE)
			CORE-3	4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	---	87B BUSBAR PROT.(CHECK ZONE)

SEC-CTA SPEC. NO.	LOCATION	132kV GT BAYS GIS CURRENT TRANSFORMER DATA					FUNCTION
		CT.	CORE NO.	RATIO	CLASS	TECHNICAL DATA	
PR9027	132kV GIS, =D04 =D09 =D10	T1	CORE-1	300/1A	5P20	---	FR+METERING
			CORE-2	300/1A	CL.PX	Vkp>360V, Rct<1ohm Im<50mA	MAIN-2 PROT (BOX-2)
			CORE-3	300/1A	CL.PX	Vkp>360V, Rct<1ohm Im<50mA	MAIN-1 PROT (BOX-1)
		T2	CORE-1	4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	87B BUSBAR PROT.(DISC. ZONE)
			CORE-2	4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	87B BUSBAR PROT.(CHECK ZONE)
			CORE-2	4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	87B BUSBAR PROT.(CHECK ZONE)

SEC-CTA SPEC. NO.	LOCATION	132kV REACTOR BAYS GIS CURRENT TRANSFORMER DATA					FUNCTION
		CT.	CORE NO.	RATIO	CLASS	TECHNICAL DATA	
PR9027	132kV GIS, =D21 =D26	T1	CORE-1	1200/1A	CL.PX	Vkp>2400V, Rct<6ohm Im<8.33mA	FR+METERING (THROUGH SATURABLE IPCT.)
				600/1A	CL.PX	Vkp>1200V, Rct<3ohm Im<16.7mA	
				400/1A	CL.PX	Vkp>800V, Rct<2ohm Im<25mA	
				200/1A	CL.PX	Vkp>400V, Rct<1ohm Im<50mA	
			CORE-2	1200/1A	CL.PX	Vkp>2400V, Rct<6ohm Im<8.33mA	BACKUP, O/C & E/F +CBF
				600/1A	CL.PX	Vkp>1200V, Rct<3ohm Im<16.7mA	
				400/1A	CL.PX	Vkp>800V, Rct<2ohm Im<25mA	
				200/1A	CL.PX	Vkp>400V, Rct<1ohm Im<50mA	
			CORE-3	1200/1A	CL.PX	Vkp>2400V, Rct<6ohm Im<8.33mA	REACTOR DIFF.PRO. (87C)
				600/1A	CL.PX	Vkp>1200V, Rct<3ohm Im<16.7mA	
				400/1A	CL.PX	Vkp>800V, Rct<2ohm Im<25mA	
				200/1A	CL.PX	Vkp>400V, Rct<1ohm Im<50mA	
		T2	CORE-1	4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	87B BUSBAR PROT.(DISC. ZONE)
			CORE-2	4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	87B BUSBAR PROT.(CHECK ZONE)

SEC-CTA SPEC. NO.	LOCATION		132kV BUS COUPLER BAYS GIS CURRENT TRANSFORMER DATA					FUNCTION
		CT.	CORE NO.	RATIO	CLASS	TECHNICAL DATA	BURDEN	
PR9027	132kV GIS, BUS COUPLER  =D130 =D230	T1	CORE-1	4000/1A	0.2FS5	---	30VA	METERING
				2000/1A	0.2FS5	---	15VA	
			CORE-2	4000/1A	CL.PX	V <sub>Kp</sub> >800V, R <sub>ct</sub> <6ohm I <sub>m</sub> <25mA	---	87B BUSBAR PROT.(DISC. ZONE)
		T2	CORE-1	4000/1A	5P20	---	30VA	O/C BACKUP PROT.
			CORE-2	4000/1A	CL.PX	V <sub>Kp</sub> >800V, R <sub>ct</sub> <6ohm I <sub>m</sub> <25mA	---	87B BUSBAR PROT.(DISC. ZONE)

SEC-CTA SPEC. NO.	LOCATION		132kV BUS SECTION BAYS GIS CURRENT TRANSFORMER DATA					FUNCTION
		CT.	CORE NO.	RATIO	CLASS	TECHNICAL DATA	BURDEN	
PR9027	132kV GIS, BUS SECTION  =D120 =D220	T1	CORE-1	4000/1A	0.2FS5	---	30VA	METERING
				2000/1A	0.2FS5	---	15VA	
			CORE-2	4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	---	87B BUSBAR PROT.(DISC. ZONE)
		T2	CORE-1	4000/1A	5P20	---	30VA	O/C BACKUP PROT.
			CORE-2	4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	---	87B BUSBAR PROT.(DISC. ZONE)

SEC-CTA SPEC. NO.	LOCATION		132KV SGT BAYS GIS CURRENT TRANSFORMER DATA					FUNCTION
		CT.	CORE NO.	RATIO	CLASS	TECHNICAL DATA	BURDEN	
PR9027	132KV GIS, =D05 (SGT-1) =D06 (SGT-2) =D14 (SGT-3)	T1	CORE-1	3000/1A	0.2F55	---	30VA	METERING
				1500/1A	0.2F55	---	15VA	
			CORE-2	3000/1A	CL.PX	Vkp>1000V, Rct<7ohm Im<25mA	---	51S/51NS+CBF-3
			CORE-3	3000/1A	CL.PX	Vkp>1000V, Rct<7ohm Im<25mA	---	87C-2 DIFF PROT.
			CORE-4	3000/1A	CL.PX	Vkp>1000V, Rct<7ohm Im<25mA	---	87C-1 DIFF PROT.
		T2	CORE-1	3000/1A	CL.PX	Vkp>1000V, Rct<7ohm Im<25mA	---	SPARE
			CORE-2	4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	---	87B BUSBAR PROT.(DISC. ZONE)
			CORE-3	4000/1A	CL.PX	Vkp>800V, Rct<6ohm Im<25mA	---	87B BUSBAR PROT.(CHECK ZONE)

NOTES

LEGEND

REFERENCE DRAWINGS

AS-BUILT

01 26-03-11 DAR REVISED AS PER SEC LETTER #030343/0036/11 DATED:22/03/2011 TAMER YAHYA YAHYA

00 31-01-11 DAR FOR APPROVAL TAMER YAHYA YAHYA

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DRAWN BY USMAN CHECKED BY TAMER SCALE: 1

DATE STARTED 23-01-2011 DATE COMPLETED

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APPROVED/CERTIFICATION INFORMATION

132kV SINGLE LINE DIAGRAM WITH CT&VT DATA

380/132/13.8kV SUBSTATION

CONSTRUCTION OF NEW 380/132/13.8kV S/S # 9027

RIYADH SAUDI ARABIA

JOB ORDER NO. 20931021/00 INDEX P PLANT NO. C257 DRAWING NUMBER CA - 181241 SHEET NO. 04 of 05 REV. NO. 01

SEC-A 12004/101

SEC-A00

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SEC-CTA SPEC. NO. PR 9027	LOCATION	132kV OHL/UG BAYS GIS CURRENT TRANSFORMER DATA						FUNCTION
		CT.	CORE NO.	RATIO	CLASS	TECHNICAL DATA	BURDEN	
	132KV GIS, -001, D02, -003, D07 -008, D11 -013, D15 -019, D16 -018, D20 -022	T1	CORE-1	1600/1A	CL.PX	Vkp>2800V, Rct<4ohm 1m<12.5mA	---	LOCAL CABLE PROT. (FUTURE)
				1200/1A	CL.PX	Vkp>2100V, Rct<3ohm 1m<16.7mA	---	
				800/1A	CL.PX	Vkp>1400V, Rct<2ohm 1m<25mA	---	
				600/1A	CL.PX	Vkp>1050V, Rct<1.5ohm 1m<33.3mA	---	
			CORE-2	1600/1A	CL.PX	Vkp>2800V, Rct<4ohm 1m<12.5mA	---	MAIN-1 PROTECTION (FUTURE)
				1200/1A	CL.PX	Vkp>2100V, Rct<3ohm 1m<16.7mA	---	
				800/1A	CL.PX	Vkp>1400V, Rct<2ohm 1m<25mA	---	
				600/1A	CL.PX	Vkp>1050V, Rct<1.5ohm 1m<33.3mA	---	
			CORE-3	1600/1A	CL.PX	Vkp>2800V, Rct<4ohm 1m<12.5mA	---	MAIN-2 PROTECTION (FUTURE)
				1200/1A	CL.PX	Vkp>2100V, Rct<3ohm 1m<16.7mA	---	
				800/1A	CL.PX	Vkp>1400V, Rct<2ohm 1m<25mA	---	
				600/1A	CL.PX	Vkp>1050V, Rct<1.5ohm 1m<33.3mA	---	
		T2	CORE-1	1600/1A	CL.PX	Vkp>2800V, Rct<4ohm 1m<12.5mA	---	FR+METERING (THROUGH SATURABLE CT.)
				1200/1A	CL.PX	Vkp>2100V, Rct<3ohm 1m<16.7mA	---	
				800/1A	CL.PX	Vkp>1400V, Rct<2ohm 1m<25mA	---	
				600/1A	CL.PX	Vkp>1050V, Rct<1.5ohm 1m<33.3mA	---	
			CORE-2	4000/1A	CL.PX	Vkp>800V, Rct<6ohm 1m<25mA	---	87B BUSBAR PROT.(DISC. ZONE)
			CORE-3	4000/1A	CL.PX	Vkp>800V, Rct<6ohm 1m<25mA	---	87B BUSBAR PROT.(CHECK ZONE)

SEC-CTA SPEC. NO. PR 9027	LOCATION	SGT BUSHING TRANSFORMER DATA					FUNCTION
		CT NO.	RATIO	CLASS	TECHNICAL DATA	BURDEN	
BUSHING -SGT-1 -SGT-2 -SGT-3		BCT-1	3000/1A	CL.PX	Vkp>3600V, Rct<7ohm 1m<25mA	---	TEE-2 PROT.
			2000/1A	CL.PX	Vkp>2400V, Rct<5ohm 1m<35mA	---	
		BCT-2	3000/1A	CL.PX	Vkp>3600V, Rct<7ohm 1m<25mA	---	TEE-1 PROT.
			2000/1A	CL.PX	Vkp>2400V, Rct<5ohm 1m<35mA	---	
		BCT-3	3000/1A	CL.PX	Vkp>1000V, Rct<7ohm ** 1m<25mA	---	87C1
		BCT-4	3000/1A	CL.PX	Vkp>1000V, Rct<7ohm ** 1m<25mA	---	87C2
		BCT-5	3000/1A	CL.PX	Vkp>1000V, Rct<7ohm 1m<25mA	---	87T2
		BCT-6	3000/1A	CL.PX	Vkp>1000V, Rct<7ohm 1m<25mA	---	87T1
		BCT-7	800/1A	--	---	---	64N
			100/1A	5P20	---	15VA	
		BCT-8	800/1A	5P20	---	15VA	50/5I+50N/5IN
			100/1A	--	---	---	
		BCT-9	3000/1A	CL.PX	Vkp>1000V, Rct<7ohm 1m<25mA	---	87T2
		BCT-10	3000/1A	CL.PX	Vkp>1000V, Rct<7ohm 1m<25mA	---	87T1
		BCT-11	3000/1A	CL.X	Vkp>1000V, Rct<7ohm 1m<25mA	---	FR
BCT-12	1200/2A	CL.3	---	15VA	HV WT1		
BCT-13	2600/2A	CL.3	---	15VA	LV WT1		
BCT-14	2600/2A	CL.3	---	15VA	LV WT1		
BCT-15	200/2A	CL.3	---	15VA	TV WT1		

SEC-CTA SPEC. NO.	LOCATION	SHUNT REACTOR BUSHING CURRENT TRANSFORMER DATA					FUNCTION
		CT.	RATIO	CLASS	TECHNICAL DATA	BURDEN	
PR 9027	132KV, SR BUSHING	LC1-1	600/1A	PX	---	---	REACTOR DIFFERENTIAL PROT. 87R
			400/1A	PX	---	---	
			200/1A	PX	Vkp>400V, Rct<1ohm Im<50mA@400V	---	
		LC1-2	1200/1A	PX	---	---	REACTOR CONNECTION DIFF.PROT. 87C1
			600/1A	PX	---	---	
			400/1A	PX	---	---	
			200/1A	PX	Vkp>400V, Rct<1ohm Im<50mA@400V	---	
		NC1-1	-	-	-	---	49R
		NC2-1	600/1A	PX	---	---	REACTOR DIFFERENTIAL PROT. 87R
			400/1A	PX	---	---	
			200/1A	PX	Vkp>400V, Rct<1ohm Im<50mA@400V	---	
		NC2-2	400/1A	5P20	---	15VA	NETURAL O/C PROTECTION 50N/5IN+FR
			200/1A	5P20	---	15VA	

SEC-CTA SPEC. NO. PR 9027	LOCATION	GT BUSHING TRANSFORMER DATA					FUNCTION
		CT NO.	RATIO	CLASS	TECHNICAL DATA	BURDEN	
-GT-1 -GT-2 -GT-3	BUSHING	BCT-1	300/1A	CL.PX	V <sub>kp</sub> >350V, R <sub>ct</sub> <1ohm I <sub>m</sub> <50mA	---	SPARE
		BCT-2	300/1A	CL.PX	V <sub>kp</sub> >350V, R <sub>ct</sub> <1ohm I <sub>m</sub> <50mA	---	SPARE
		BCT-3	1200/1A	CL.PX	---	---	SPARE
			800/1A	CL.PX	V <sub>kp</sub> >1400V, R <sub>ct</sub> <2ohm I <sub>m</sub> <50mA	---	
		BCT-4	300/1A	CL.PX	V <sub>kp</sub> >350V, R <sub>ct</sub> <1ohm I <sub>m</sub> <50mA	---	HV.REF+SBEF1
		BCT-5	300/1A	CL.PX	V <sub>kp</sub> >350V, R <sub>ct</sub> <1ohm I <sub>m</sub> <50mA	---	HV.REF+SBEF2
		BCT-6	2510/1A	CL.1	---	50VA	AVC
		BCT-7	3000/1A	CL.PX	V <sub>kp</sub> >765V, R <sub>ct</sub> <10ohm I <sub>m</sub> <25mA	---	L.V.REF+SBEF1
BCT-8	3000/1A	CL.PX	V <sub>kp</sub> >765V, R <sub>ct</sub> <10ohm I <sub>m</sub> <25mA	---	L.V.REF+SBEF2		

SEC-CTA SPEC. NO.	LOCATION	GIS VOLTAGE TRANSFORMER DATA					FUNCTION
		VT NO.	TYPE	SECONY WIND.	TECHNICAL DATA	CLASS	
PR 9827 SC/P/ 9827- 1P4-1	---	VT's	3Ø INDUCTIVE	1'st	132/√3kV : 115/√3V-115V	100VA,CL: 0.2/3P	---
				2'nd	132/√3kV : 115/√3V-115V	100VA,CL: 0.2/3P	---

NOTES	
*** CT DATA FOLLOWED OTHER 87C PROTECTION CT'S	
LEGEND	

REFERENCE DRAWINGS	
DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CE-195451

[illegible]

AS-BUILT		BY	DATE		
01	26-03-11	DAR	REVISED AS PER SEC LETTER #030343/0036/11, DATED 22/03/2011		
00	31-01-11	DAR	FOR APPROVAL		
			TAMER	YAHYA	YAHYA
			TAMER	YAHYA	YAHYA
REV. NO.	DATE	BY	DESCRIPTION		CHKD. CERT. APPD.

<h2 style="margin: 0;">الشركة السعودية للكهرباء</h2> <h2 style="margin: 0;">Saudi Electricity Company</h2>	
DRAWN BY : USMAN	CHECKED BY : TAMER
SCALE: _____	
DATE STARTED : 23-07-2011	DATE COMPLETED : _____
OPRG. DEPT. : _____	ENG. DEPT. : _____
THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNLESS CERTIFIED AND DATED	
<b>GENERAL INFORMATION</b> BPC NO. _____ DEFEND. _____	
<h3 style="margin: 0;">132kV SINGLE LINE DIAGRAM WITH CT&amp;VT DATA</h3> <h3 style="margin: 0;">380/132/13.8kV SUBSTATION</h3>	
CONSTRUCTION OF NEW 380/132/13.8kV S/S # 9027	
RIYADH	SAUDI ARABIA

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
20931021/00	P	C257	CA - 181241	05 of 05	01